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Children of ISIS: considerations regarding trauma, treatment and risk

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The rise of the Islamic State of Iraq and Syria (ISIS) brought with it a new wave of child soldier. This was characterised by media and propaganda circulating of children as young as four being exposed to detonators and rifles, along with perpetrating acts of violence. However, since the dismantling of ISIS, many of these children are now returning home to countries such as Australia and those in the United Kingdom and Europe; having been exposed to extremist Islamic ideology, radicalisation, and psychological and physical abuse. This review highlights that the trauma experienced by the child soldiers increases the possibility of symptomology associated with depression, anxiety, and externalising problems. Due to the complex and prolonged exposure to trauma, Developmental Trauma Disorder (DTD) is considered. Alongside mental health symptomology, psychometric risk assessment tools are examined, and suitable psychological services are discussed as possible interventions and support systems for children.

Key words: assessment; child abuse; child soldier; radicalisation; terrorism; trauma; treatment.

In February 2016, the Islamic State of Iraq and Syria (ISIS) released a propaganda video featuring three Syrian men in their early twenties dressed in orange boiler suits, allegedly recruited by British Intelligence Services to fight against ISIS. These 'spies', as alleged by ISIS, were handcuffed and forced into a white car. What followed from this scene was nothing short of distressing. The camera focuses on a young boy dressed in camouflage attire, wearing a black headscarf bearing the ISIS logo. The child proceeds to declare, 'We are going to kill the kaffir (non-believers) over there (para. 2)' (Tomlinson, 2016). Next to him, a British teenager rants against Britain and the British Prime Minister David Cameron, threatening war to avenge the deaths of Muslims around the world. The teenager then places his hand on the young boy's head and declares – 'So prepare your army and gather your nations as we too are preparing our army' (para. 16) (Gutteridge, 2016). The video again focuses on the young child holding a black device resembling a mobile phone; he appears to make a hand symbol before pressing the button on the device that detonates explosives attached to the vehicle, killing the men and shrouding the video footage with a large explosion. Afterwards, the young child is seen standing triumphally next to the charred remains of the car, shouting 'Allahu

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Akbar' and throwing his fist into the air (Dearden, 2016a; Gutteridge, 2016).

The young child, who became labelled, 'Jihadi Joe' was eventually identified as four-year-old Isa Dare (Rayner, 2016). Isa was taken to Syria from London by his Muslim convert mother, Grace 'Khadija' Dare, who is alleged to have had an association with the killers of British solider Lee Rigby, who was attacked in London (Gutteridge, 2016). The youngster was also seen in pictures on social media posted by his mother in 2015, smiling and posing next to an ISIS flag holding a toy gun, and in another, aiming an AK-47 automatic rifle that he could barely lift (Rayner & Walton, 2016). Grace was believed to have been radicalised online and took her son, Isa, to Syria without her ex-husband's knowledge. She gloated about the beheading of American journalist James Foley on social media, and also expressed her desire to be the first British woman to be responsible for killing an ISIS hostage (Tomlinson, 2016).

Following the propaganda video involving Isa, reports emerged suggesting that Isa and Grace travelled from Syria to Sweden for medical treatment after Isa became ill, unable to receive adequate treatment from ISIS doctors. While sources claim they are unsure where in Sweden Grace and Isa were, they contend that Grace would not risk returning to Britain for fear of being arrested (Parfitt, 2016). It is unclear how they managed to evade security forces, considering Isa became famous after appearing in propaganda videos and on social media. Their current whereabouts are unknown. Sadly, the case of Isa Dare is not a stand-alone incident, with further ISIS-inspired violence involving children.

In August 2016, the ISIS propaganda arm in the Syrian province of Raqqa released a video containing five young children, believed to be from Britain, Egypt, Turkey, Tunisia and Uzbekistan (Summers, 2016). The five boys, appearing to be aged between 10 and 13 years of age, are each shown in military attire, holding firearms and standing behind kneeling Kurdish fighters who have been captured and held hostage (Payton, 2016; Summers, 2016). What transpires is a nine-minute video whereby the five children shout in unison 'Allahu Akbar' (God is Great), before proceeding to execute the five men. One of the five boys, a Caucasian-appearing blue-eyed child, identified as Abu Abdullah al-Britani in the video, was believed to have been Joe Dixon, a British national. It is thought Joe was taken by his mother, Sally Jones, to Syria when she fled the UK to join the Islamic State in 2013 (Dearden, 2016b). Jones, a former punk rocker, left Britain with her young son when he was approximately eight years of age. She received notoriety for her prolific ISIS propaganda, whereby she published 'kill lists' and declared her wish to behead Christians. Her posing in ISIS-related material earnt her the nickname, the 'White Widow' (Pasha-Robinson, 2017), prior to her reported death in 2017 from a USA drone strike in Syria (Mortimer, 2017).

In 2016, the potentially fatal suicide bombing attempt in the Iraq city of Kirkuk took place (Godden, 2016). Fifteen-year-old Mohammed Ahmel Ismael was observed tentatively walking towards a football stadium wearing an explosives vest. Confronting images can be seen of the young adolescent being restrained by security and police as the explosive device is removed from his body. The reported accounts of the event were that Mohammed was under considerable emotional distress as he progressed towards the stadium, slowing his trajectory towards the venue and providing time for police and security to intervene (Godden, 2016; Miles, 2016). The planned suicide attack was alleged to have arisen after Mohammed was trained in an ISIS camp with hundreds of young radicalised children, provided with instructions on beheading, explosives and weaponry (Miles, 2016).

The incidents involving Isa Dare, Joe Dixon and Mohammed Ahmel Ismael highlight significant emerging concerns in relation to children of ISIS. These cases are known examples of children being involved in

incidents of radicalised violence, although the full extent of child involvement in ISIS is largely unexplored (Dozier, 2019). More importantly, the systematic effects of the violence, victimisation and radicalisation of these children have received limited consideration (Koehler, 2020). This is matter of critical importance given the long-rippling effects that may emerge from radicalised violence, extensive traumatic events and maltreatment. This pertains not only to the potential risk of harm posed to broader society, but also in regard to the general psychosocial wellbeing of all children. The involvement of children in ISIS has led to a new form of child soldier: indoctrinated, trained and paraded through video media to achieve the missions of the Salafi-jihadist organisation Islamic State (Bozorgmehri, 2018; Van der Heide & Alexander, 2020). As such, these children are likely to face similar consequences (e.g. violent cognitions, disturbed attachment, increased risk of mental health problems, social reintegration issues and possible re-recruitment) to those for the thousands of children who have participated in conflicts as soldiers over the decades (Child Soldier International, 2018). Childhood is a pivotal time during a person's development, and it is critical to consider the effects of extremist ideology and radicalisation on ISIS-affiliated children.

In June 2019, the Australian government repatriated eight children from Syria (Davidson, 2019). Following this, the government introduced legislation (Counter-Terrorism (Temporary Exclusion Orders) Act, 2019) that allowed citizens below 14 years of age with suspected links to terrorist organisations to return to Australia. According to Shanahan (2020), approximately 70 children continue to reside in camps in Syria, waiting to return to Australia. Similarly, the U.K. government has facilitated the repatriation of three British children of suspected ISIS members who travelled to Syria (Postings, 2019). Whilst countries such as Kazakhstan, Russia and Turkey are considered to have proactively commenced repatriation (Cook & Vale, 2019, Van der Heide & Alexander, 2020), 'fewer than 350 children living in three camps in northeast Syria and born to parents from a nationality other than Syrian or Iraqi are known to have been repatriated to their home country since January 2019 out of more than 9,800' (para. 1) (Save the Children, 2019). With countries now facing publicised pressure to repatriate children born to their citizens, it is increasingly important to understand how these children might be impacted by their exposure and/or engagement with ISIS.

Although there is an emerging body of research on Children of ISIS, few studies have examined the psychological adversity experienced by these children. Research has shown that children exposed to frequent, persistent or extreme violence, abuse or neglect are at risk of experiencing permanent changes to brain development, with the exposure to trauma during childhood and adolescence causing greater pervasive effects than in later stages of life (Maté, 2003; B. D. Perry, 2001; Van der Heide & Alexander, 2020; van der Kolk, 2005). The current paper examines the recruitment and indoctrination of children involved with ISIS, along with discussing the psychological effects experienced by child soldiers under the ISIS campaign. Previous research on child soldiers has demonstrated that the transition from the military to civilian life is particularly complex and challenging for children; however, unlike prior child soldiers, those affiliated with ISIS have been indoctrinated through an extremist Islamic ideology (Capone, 2017; Koehler, 2020; Morris & Dunning, 2020). This ideology is fostered upon instilling a specific worldview that normalises violence and promotes martyrdom as an honourable reward for the emigration and waging of jihad (Bozorgmehri, 2018; Van der Heide & Alexander, 2020). To assist with understanding the psychological adversity experienced by children of ISIS, the prior literature on child soldiers is examined, drawing

parallels with the experiences of child soldiers and the subsequent development of psychopathology. The neuropsychological impacts associated with trauma and accompanying psychopathology are discussed, with particular consideration given to the ongoing developmental challenges facing children of ISIS. Finally, the paper examines the importance of children being reintegrated into civilian life, discussing considerations for risk assessment and treatment to support repatriation. Traditionally child soldiers associated with armed forces have been viewed as victims rather than perpetrators; however, children affiliated with ISIS are considered to pose a threat to national and international security, highlighting the need for risk management and psychological intervention to prevent radicalisation to terrorism and future violence (Capone, 2017).

Children of ISIS

ISIS is a militant jihadist group, which despite having been largely dismantled, remains an ongoing threat to society and world peace (Anaie, 2019; Lekas, 2015). During the ISIS reign, the militant group amassed more fighters, funding and territory than any other terrorist movement (DePetris, 2014; Lekas, 2015). The role of children in ISIS has been significant, with children heavily indoctrinated with radical ideology (Capone, 2017; Morris & Dunning, 2020; Wood, 2016). It was estimated that around 40,000 foreign fighters from 80 countries travelled to the Middle East in support of ISIS to help build the caliphate, with many children coerced and indoctrinated as a consequence (Yee, 2019). Children were groomed to become the next generation of fighters and continue the tyranny and legacy of their fathers and/or mothers (Benotman & Malik, 2016; Capone, 2017). They were trained and employed as scouts, spies, cooks or fighters, or used as human shields on the battlefield (Benotman & Malik, 2016). Some were instructed to plant bombs at sites and become suicide bombers (Yee, 2019). Young girls and teenagers were exploited as sex slaves and wives to fighters (Benotman & Malik, 2016; van der Heide & Geenen, 2017). Young boys were trained in military camps to prepare to fight on the frontline and were taught how to assemble weapons and explosives (Benotman & Malik, 2016; Horgan et al., 2017).

Many of these young children have been seen in propaganda videos beheading and shooting prisoners and so-called 'spies' against ISIS (Yee, 2019). The General Intelligence and Security Service (2017) in the UK suspects that children as young as nine were trained to use weapons and kill. Estimates suggest that more than 2000 boys between the ages of nine and 15 have been recruited and trained as the 'Cubs of the Caliphate' (Sommerville & Dalati, 2017). While the exact numbers are difficult to attain, reports suggest that the number of women and children who have joined ISIS might be largely underestimated, with estimates of foreign minors alone ranging between 6577 and 9800 (Cook & Vale, 2019; Van der Heide & Alexander, 2020). Ultimately, these children are expected to carry forward the ideology of ISIS despite the current non-existence of a physical caliphate (Khomami, 2018).

Cubs of the Caliphate

Children have been used in various conflict zones for decades (Singer, 2006). Their impressionable nature and high susceptibility to indoctrination make them ideal recruits for militia groups (Benotman & Malik, 2016; Blattman, 2007). ISIS sought to indoctrinate and train the younger generations of children, not merely for winning the current war, but to strengthen their state-building process for the ultimate Islamic utopia (Blattman, 2007; Heil, 2004; Morris & Dunning, 2020). The concept of the 'Cubs of the Caliphate' emerged as a tactical approach to war, inspired by Saddam Hussein's 'lion cubs'. Under the governance of Saddam, hundreds of boys, as young as nine, were recruited to join military training

for three weeks. This encompassed learning weapon proficiency and military skills, under the guise of building a young cadre of soldiers prepared to fight and die for the cause (Heil, 2004). This form of methodology and approach to indoctrination and military preparation was mirrored in ISIS's campaign towards militant violence (Almohammad, 2018).

In reviewing the approach of ISIS requirement and training, Almohammad (2018) observed that ISIS had access to children through orphanages, schools and mosque-based teaching sessions. A pertinent feature of child recruitment involved young boys being abducted from their homes and coerced into ISIS training camps (Capone, 2017; Morris & Dunning, 2020). Once recruited, young cubs were made to improve their skills in Quran memorisation and Islamic history, and forbidden from learning anything resembling western culture or liberal thinking (Benotman & Malik, 2016). Physical education, or *Jihadi* training, included swimming, wrestling and shooting. Learning about the assembly and use of weapons was also part of this training (Benotman & Malik, 2016). Children were taught that everyone beyond the borders of the caliphate were their enemies, and that jihad was obligatory (Sommerville & Dalati, 2017).

The terror group took advantage of the naivety and vulnerability of children, forcing them to adopt a narrative justifying violence and hate at a young age. The indoctrination process employed by ISIS was characterised by seduction, schooling, selection, subjugation, specialisation and stationing (Horgan et al., 2017). The indoctrination was often initiated by a person the child trusted and respected. For instance, in the classroom, it was the teacher's role to groom children and instil a sense of pride for playing a part in the progress of the caliphate (Benotman & Malik, 2016). While at home, mothers were responsible for 'brainwashing' their children and were provided with a book on how to raise a jihadi child. Suggestions included exposing children to graphic content through extremist websites, reading bedtimes stories about martyrdom and playing sports to improve fitness (Withnall, 2015). Some children were socialised into ISIS at public spaces or mosques, whilst others were made to wave the ISIS flag and chant slogans in support of ISIS (Horgan & Bloom, 2015). What began with chanting slogans progressed into indoctrination in ISIS schools, and tragically progressed to some children being forced to kill their own family members, in order to dispel their psychological defences and mitigate any opportunity of them returning home (Blattman & Beber, 2013). In addition, children were educated in relation to why punishment was administered and over time the regularity of these occurrences resulted in this behaviour being viewed as normal (Horgan & Bloom, 2015).

Children as young as three were taught to decapitate stuffed toys (Hurd, 2017), whilst others in propaganda videos appeared emotionless as they decapitated a human being and paraded around with the severed head (Hall, 2015). Children were constantly exposed to and required to engage in violent behaviour, acts that were promoted through training camps. On a typical day in the camps, children started their day with prayers at 4am, followed by physical exercise, combat training and lessons in Sharia law (Sommerville & Dalati, 2017). Physical training included being kicked, punched and hit with wooden sticks to build tolerance to pain (Cubs of the Caliphate, 2015). The young cubs marched in military uniform and headscarves, holding AK-47s (Cubs of the Caliphate, 2015) and were required to train in hand-to-hand combat and fire weapons. The children distributed knives to men preparing to execute prisoners or carried out the executions themselves (Horgan & Bloom, 2015). Like the adults, their training also included jumping through burning tyres and crawling under barbed wire, while live rounds were shot over their heads (Sommerville & Dalati, 2017).

After weeks of training, most of the cubs graduated and were paraded around in full uniform holding weapons, setting an example for other children to commit to ISIS in the same manner (Benotman & Malik, 2016). The perverse nature of this training was exemplified in a 2015 video released by ISIS. The video depicted a group of children dressed in military uniforms shooting 25 Syrian soldiers, surrounded by an amphitheatre full of people. The video exemplified the modernity of the ISIS approach to recruitment, utilising the internet and social media to broadly reach fanatical and religious clusters (Bozorgmehri, 2018). The creation of videos assisted ISIS in promoting messages pertaining to the divine benefits of jihad, the importance of the holy mission and the role of hate and violence in conquering Western nations (Bozorgmehri, 2018; Van der Heide & Alexander, 2020). Subsequently, ISIS produced several other videos showing children training to take captives, execute prisoners, ambush moving vehicles and engage in weapon use (Benotman & Malik, 2016; Horgan & Bloom, 2015). The purpose of these videos appeared two-fold, to inspire and radicalise other young children watching the material, and to engage in psychological warfare by displaying the capabilities of their cubs. It is estimated that between 2015 and 2016, 89 children were killed and eulogised through this form of propaganda (Bloom et al., 2016).

Along with being trained in militant skills, many children were subject to considerable hardship, suffering physical and emotional deprivation during their training and involvement with ISIS (Morris & Dunning, 2020). These hardships ranged from the threat of being killed by stray bullets (Sommerville & Dalati, 2017), through to sleeping in flea-infested conditions (Benotman & Malik, 2016). Children were also drugged to reduce any fear and hesitation which could impede their ability to comply with tasks (Engel, 2016b). Overall, many children were displaced from their homes, distanced from loved ones, exposed to extreme violence and subjected to extensive physical and psychological abuse (Capone, 2017). For any child, the exposure to abuse and the rupture to family and social support is significant, and although many of the children involved with ISIS have been removed from the immediate situations, the ongoing implications relating to the trauma and radicalisation are issues of concern. The psychological effects of trauma (e.g. threat, dehumanisation, punishment and pending harm) coupled with milieu-specific reinforcing factors (e.g. sense of community and belonging, empowerment, social identity, spirituality and social support) have served to promote the compliance and engagement of children (Koehler, 2020). These contrasting practices have led to children being in a state of mental flux and emotional uncertainty. Subsequently, through radicalisation, children adapt their behaviour to conform with collective norms and goals, whilst experiencing a psychological dependence and addiction to the extremist milieu and their existing environment (Koehler, 2020; S. Perry & Hasisi, 2015). Despite radicalisation, trauma and mental health concerns, currently many children involved with ISIS have been placed in camps and prisons without receiving any form of treatment or support to address the myriad of cognitive, emotional and behavioural implications.

Lessons from former child soldiers

Children of ISIS represent a new wave of child soldier; however, there have been many militant campaigns where children have been exposed to multiple forms of violence and abuse. Child soldiers are not a new phenomenon, with it being estimated that at any time, there are approximately 300,000 children in armed forces or armed groups across more than 87 countries (Coalition to Stop the Use of Child Soldiers, 2008). In 2007, UNICEF estimated that two million children have been killed in armed conflict over the past decade,

with another six million children disabled and 20 million displaced. A child soldier is 'any person under age 18 who is part of any kind of regular or irregular armed force or group in any capacity' (UNICEF, 2007). This can include children engaged in combat through to those assigned to domestic duties within an armed group. Research suggests that children generally become involved with armed forces through one of three ways: being abducted or conscripted through threats or force; voluntarily presenting to become enlisted or enrolled; and being born into armed forces (Capone, 2017). Although many children have entered ISIS through these common means, ISIS has also deviated from these primary pathways (Capone, 2017; Horgan et al., 2017). Whilst previous child soldier recruitment has been done surreptitiously, ISIS have brazenly promoted child soldiers (Bloom et al., 2016). Moreover, many children have also been indoctrinated into the campaign due to the extremist ideology of their foreign parents who have travelled to the Middle East (Capone, 2017).

Across populations of child soldiers, many have been exposed to killings, sexual abuse and torture, 'representing one of the most complex traumatized populations of children and adolescence' (Klasen et al., 2015, p. 181). In studies on Ugandan child soldiers, between 36 to 93% of children reported having personally killed someone (Bayer et al., 2007; Derluyn et al., 2004; Klasen et al., 2015; Okello et al., 2007). Similar rates were observed in a study on Sri Lankan child soldiers, with 45% of the children studied reporting that they had killed others, whilst 64% of child soldiers in the Dominican Republic of Congo had engaged in killing (Bayer et al., 2007; Betancourt et al., 2013; Kanagaratnam et al., 2005).Whilst a comprehensive study of child soldier violence in the ISIS campaign has not been undertaken, case reports to date have indicated that children have observed and engaged in killings, been subjected to sexual violence, forced into marriage, tortured and punished for failed compliance, and trafficked for sex-slavery (Malik, 2017; Van der Heide & Alexander, 2020).

The systemic effects of violence on child soldiers was investigated by Betancourt and colleagues (2013) in a comprehensive review on 3984 child soldiers. The authors examined 21 studies completed on child soldiers, ranging from the 1940s through to 2013. The research encompassed child soldiers from 10 countries, including: Sierra Leone, Liberia, Uganda, the Democratic Republic of Congo (DRC), Mozambique, Nepal, Sri Lanka, El Salvador, Côte d'Ivoire and Germany. Regardless of the country, all studies on child soldiers identified the emotional and traumatic tolls of child soldiering, identifying the presence of post-traumatic stress disorder (PTSD). The exposure to traumatic or stressful circumstances is associated with the development of PTSD, with the condition characterised by the re-experiencing of trauma, avoidant thoughts or behaviours, and negative alterations in cognitions and mood (American Psychiatric Association, APA, 2013). Across the 21 studies, prevalence rates of PTSD symptomology ranged from 27% to 99% of children, with PTSD prevalence significantly greater in former child soldiers than in never-conscripted children (Betancourt et al., 2013; Kohrt et al., 2008; MacMullin & Loughry, 2004; Okello et al., 2007). One notable exception to the elevated prevalence rate of PTSD was observed in a sample of former German geriatric child combatants who were interviewed 60 years after deployment, with only 2% of the sample displaying PTSD, suggesting a decline in trauma symptomology over time (Forstmeier et al., 2009).

Betancourt et al. (2013) identified that the severity of trauma experienced by child soldiers was a matter of complexity, influenced by several factors, including abduction, age of conscription, gender, exposure to violence, stigma and the availability of protective factors. For instance, the majority of studies in the research observed that female child

soldiers had a greater severity of psychosocial problems than did male child soldiers, with one study identifying that female child soldiers were 6.8 times more likely to have PTSD than males, who were 3.8 times more likely to present with the disorder (Betancourt et al., 2013; Kohrt et al., 2008). Factors such as abduction were also identified to impact treatment outcomes for child soldiers, with the greatest treatment effects observed in cases without an abduction history (Bolton et al., 2007). The review of the findings on child soldiers led Betancourt et al. (2013) to conclude: 'children often experience mental health problems following their association with fighting forces, especially if they have been exposed to toxic forms of violence and return to limited family and peer supports as well as community stigma and limited educational and economic opportunities' (p. 33).

The psychopathology that develops in child soldiers can result in a range of comorbid symptomology associated with internalising and externalising problems (Klasen et al., 2015; Song et al., 2014). At the centre of mental health psychopathology is the impact of stress on a child, with unmanageable, extreme and prolonged stress characterised as toxic. Through the repeated experience of toxic stress, mental health conditions can emerge, in particular a spectrum of disorders related to depression, anxiety and trauma-related disorders (Andersen & Teicher, 2009; Del Giudice, 2014; Koehler, 2020). For example, although not directly involved in combat, Nouri was abducted with his family and taken to ISIS camps when he was 11 years old (Elbagir & Wilkinson, 2016). After being abducted Nouri refused to comply with the demands within the ISIS training camp. Consequently, ISIS fighters broke his leg in three places, with Nouri considered useless to the mission. He was permitted along with his 5-year-old brother, Saman, to leave the camp; however, both have been highly traumatised since this time. Saman, who was subjected to frequent beatings, regularly wakes screaming in the night and now suffers from seizures. He remains in a constant state of hypervigilance, displaying fearful behaviours of a pending violent reprimand from his grandparents whilst also seeking comfort at the sound of heavy rain. His brother Nouri has become reserved and passive, rarely interacting with peers or leaving the family home (Elbagir & Wilkinson, 2016).

The literature on child soldiers indicates that children of ISIS have been exposed to many of the psychological adversities that have been observed in prior populations (Koehler, 2020). This includes the experience of poverty, fear, duress, deprivation, sexual abuse, physical abuse and the witnessing and engagement in violence. However, unlike previous child soldiers, minors affiliated with ISIS have been subject to the lure of jihad, an extremist ideology and primary driver of radicalisation to violence (Capone, 2017). Children have formed an integral part of the ISIS mission, with children regarded as the next wave of leaders and fighters, rather than as expendable resources as in previous child soldier populations (Horgan et al., 2017; Morris & Dunning, 2020). For ISIS, the combat training of children has formed only part of the radicalisation process, with the indoctrination of an extremist ideology and identity amongst children also pertinent to the mission (Horgan et al., 2017; Van der Heide & Alexander, 2020). As late Islamic State affiliate Abu Muhammed al-Adnani reportedly remarked, 'We will conquer your Rome, break your crosses, and enslave your women. … If we do not reach that time, then our children and grandchildren will reach it … ' (Wood, 2016). Consequently, children of ISIS have been exposed to an enmeshed development, marked by indoctrination and psychological adversity.

Amongst former child soldiers, the most commonly identified condition arising from psychological adversity has been the development of trauma-related symptomology (Koehler, 2020). However, although PTSD is

often considered to be the primary presenting issue for child soldiers, there are several secondary or co-occurring symptoms and disorders that have been discovered. Across previous studies, 19–53% of child soldiers have displayed symptoms consistent with the diagnostic criteria of major depressive disorder (MDD; Klasen et al., 2010; Kohrt et al., 2008; Okello et al., 2007). In a study of 330 former Ugandan child soldiers, Klasen et al. (2015) found that approximately one third of the sampled children scored above the clinical cut-off for MDD and PTSD, suggesting comorbidity of psychological disorders. In addition to these disorders, one quarter of the children displayed clinical levels of externalising problems, characterised by rule breaking, cruelty towards others, disobeying authority and aggressive behaviour. Interestingly, Klasen and colleagues observed that the line between victim and perpetrator was blurred for many of the sampled children, with all children victims of at least one traumatic event whilst also being forced to commit crime. The greater exposure that a child had to traumatic events (whether as a perpetrator or victim), the more likely they were to experience higher levels of trauma-related guilt and higher levels of psychopathology. Moreover, the higher trauma-related guilt, the greater the level of psychopathology displayed by the children. Trauma-related guilt is considered to arise when a person is emotionally harmed by a traumatic experience, yet personalises the event, perceiving a sense of responsibility for the circumstances (Kubany et al., 1996). This sense of responsibility has been described as *survivor guilt*, the guilt of surviving the event while somebody else died (Kubany, 1994).

A common misconception in understanding the effects of trauma is the reliance on a diagnosis of PTSD to indicate clinical significance. The practice of measuring trauma as defined only by the presence of PTSD has been widely criticised, particularly given that PTSD may not account for the range of psychological sequelae that develop from prolonged and reoccurring traumatic exposure, nor the relevancy of traumatic exposure to specific lifespan and developmental increments (Herman, 1992, Klasen et al., 2015; Maté, 2003; van der Kolk, 2005). Although the *Diagnostic and Statistical Manual of Mental Disorders–Fifth Edition* (DSM–5) includes a new specification for preschool-type post-traumatic stress disorder, young children may not initially display extreme or overt distress following trauma, with the residual effects emerging with age (APA, 2013; Malchiodi, 2015). The importance of considering the life course persistent effects of trauma led to van der Kolk (2005) proposing the concept of developmental trauma disorder (DTD). According to van der Kolk (2005), 'the PTSD diagnosis does not capture the developmental impact of childhood trauma: the complex disruptions of affect regulation, the disturbed attachment patterns, the rapid behavioural regressions and shifts in emotional states, the loss of autonomous strivings, the aggressive behaviour against self and others, the failure to achieve developmental competencies; the loss of bodily regulation in the areas of sleep, food and self-care; the altered schemas of the world; the anticipatory behaviour and traumatic expectations; the multiple somatic problems from gastrointestinal distress to headaches; the apparent lack of awareness of danger and resulting endangering behaviours; the self-hatred and self-blame and the chronic feelings of ineffectiveness' (p. 406).

DTD is a global conceptualisation of the developmental impacts of trauma, beyond the scope of the PTSD diagnostic criteria. Although not formally recognised by the DSM–5, DTD predicates that multiple exposures to interpersonal trauma, including betrayal, abandonment, witnessing of violence and physical or sexual assault, result in consequences that affect many areas of functioning (van der Kolk, 2005). The extent of DTD can lead to neurobiological changes in brain development and even though PTSD may not be overtly apparent, the effects of trauma can

remain throughout a person's lifespan and proceed as intergenerational trauma in offspring (Song et al., 2013, 2014; van der Kolk, 2005). The phenomenon of intergenerational trauma suggests that a parental history of trauma can be directly or indirectly transferred to offspring without children having ever been exposed to the source of trauma, suggesting a combination of genetic inheritance and parental patterns of behaviour (Dekel & Goldblatt, 2008; Ruscio et al., 2002). In a review of intergenerational trauma, Dekel and Goldblatt (2008) found that among Vietnam veteran fathers and their sons, paternal PTSD was more influential than a history of combat participation in predicting their children's PTSD. Similar findings were observed in a qualitative study by Song and colleagues (2014), who observed that former Burundian child soldiers with severe mental illness transmitted trauma directly to their children, with symptoms of numbness, dissociation and anxiety observed in their offspring. The findings identified that the emotional tolls of child soldering hindered parenting capacity, and although former child soldier parents were not overwhelmed by the everyday demands of parenting, they were more overwhelmed by emotional distress. The impact of this emotional distress on former child soldier parents led to them withdrawing from their children and failing to adequately support the emotional needs of their children, affecting the bonding and attachment of the child (Song et al., 2014). Consequently, it appears that intergenerational trauma occurs through both parents transmitting trauma directly to their children, whilst also parenting children through an unresponsive and disengaged attachment style. Moreover, the impact of intergenerational trauma has also been found to be further compounded by social and community factors, with community stigma and social isolation perpetuating the effects of trauma in the parent and child relationship (Song et al., 2014).

The myriad of effects that can result from the toxic stress and trauma experienced by child soldiers is profound, particularly when viewed through the DTD lens. Although PTSD may present shortly after exposure to the traumatic events, overtime PTSD symptomology can reduce or appear to be in remission; however, the foundational implications of trauma during child development remain. As noted by van der Kolk (2005), the altered schemas of the world, gastrointestinal distress and the chronic feeling of ineffectiveness may continue largely undetected and unobserved, not considered to have diagnostic significance, yet still affecting psychological and physiological functioning. To make decisions about the trauma experienced by child soldiers based primarily on the presence or reduction in PTSD symptomology suggests a misunderstanding in relation to the role of trauma in childhood development, particularly at the neurobiological level. Although it remains important to understand the presenting issues associated with PTSD or any other presenting mental illness for child soldiers, any attempts at intervention or alternatively harm or risk reduction must consider the neurodevelopmental effects of trauma, particularly a brain exposed to and developed through violence.

The neurodevelopmental effects of trauma

Human beings are hard-wired for connection through attachment with primary care figures (Maté, 2003). The brain is shaped and developed through interactions with the caregiver, along with the sensorial occurrences within the child's environment (Gazzaniga, 1995). During childhood development, neurons connect to each other, forming primary pathways in which information is communicated. Through repetition and repeated experiences these pathways become reinforced, creating ways that the brain and body respond to internal and external stimuli (Uhernik, 2017). This developmental process, commonly governed through approach and avoidance behaviour, along with punishment and reward, mediates and reinforces a child's interactions

with the world. In the case of Isa Dare (as discussed earlier), who is seen smiling and laughing when playing with weapons and detonating explosives, it is evident that he has been rewarded for behaviour that reinforces violence (Corr, 2008). This association suggests that violent ideology is rewarded and conditioned as an appetitive stimulus, fostering neural pathways associating pleasure with violence.

According to B. D. Perry and Szalavitz (2008), the brain develops and organises in a usage-dependent manner, forming and pruning synaptic connections based on learning and reinforcement. The progression of brain development occurs in a hierarchical manner, with the lower component of the brain, also known as the '*survival brain*', developing before the emotional and thinking regions (B. D. Perry, 2001). At the base of the brain is the brainstem and cerebellum, an area responsible for the automatic functioning that regulates many of the body's physiological responses. The life-sustaining capacity of this area of the brain is what has led to this being referred to as the survival brain. The survival brain regulates heartbeat, breathing, temperature, sleep and basic movement. Due to the functions of this area of the brain it is also often referred to as the '*reptilian brain*' as it is the most ancient region of the brain similar to that of solitary animals like reptiles (Levine & Kline, 2007). The limbic system consists of the structures of the hippocampus, hypothalamus and amygdala and is often referred to as the '*emotional or mammalian brain*'. The amygdala plays an essential role in processing, interpreting and integrating perceived threats and emotional functions (Corr, 2008; Gazzaniga et al., 2009). The limbic system's primary function is the activation of the flight–fight–freeze response and the forming of survival patterns in relation to emotional stimuli (Malchiodi, 2015). The more that neural systems for survival are activated, the more sensitive the limbic system and brainstem become in response to stress. These activations will become 'built in' through repeated exposure to violence and trauma, consequently creating structural and functional changes within these regions (B. D. Perry, 2001). This form of activation and functional change is evident in the case of Saman and Nouri, with Saman now frightened of impending punishment and rain, and Nouri dissociated and withdrawn (Elbagir & Wilkinson, 2016). The final area of the brain to build connections is the neocortex or the '*thinking brain*'. This section of the brain is involved in reasoning, planning, language, consciousness, metacognition and communication. It is important to note that although these areas are of greater functional complexity, it is the governance of the lower, foundational parts of the brain that will hold significance in the way that the neocortex is formed and, therefore, the way in which an individual responds and acts to their internal and physical environments (Malchiodi, 2015).

Depending on the stage of child development and the severity of exposure to adverse events, the implications to brain and cognitive development may vary. The earlier the age that trauma occurs, the greater the impact to brain development and physical functioning (Sonne & Gash, 2018). Certain vulnerabilities also exist during adolescence, with emotional response mechanisms particularly vulnerable and susceptible during this period of age (Koehler, 2020). Therefore, consideration of the neurodevelopmental impacts from trauma are required for each individual, with each child likely to experience varied difficulties relating to emotional responsiveness, cognitive reasoning and social communication (Mead et al., 2010). When a child has been subjected to sustained and repeated exposure to adverse events, changes to the limbic system can arise, leading to reinforced sensory processes whereby there is a tendency towards perceiving significant danger within the environment. This can create a general psychological and

physiological state characterised by vigilance and survival (Malchiodi, 2015). When cues of danger are perceived by the limbic system, the sympathetic nervous system is activated, leading to a cascade of stress hormones flooding the body and creating an unconscious physiological reaction via the hypothalamus, pituitary and adrenal glands (Smith & Vale, 2006). The activation of the sympathetic nervous system governs the flight–fight response, while the triggering of the parasympathetic system leads to the freeze response. The parasympathetic system is activated when a child is unable to escape or protect themselves during a threatening situation. This system places a child in a dissociative state, characterised by the activation of the dopenephric and opioid systems, which serve to alter the perception of pain, time and reality (B. D. Perry & Szalavitz, 2008). Overtime, the repeated activation of the stress-response system leads to suppressed immune functioning and inhibited memory, and decreased learning and emotional functioning (B. D. Perry, 2001).

The repeated and chronic overactivation of the autonomic (sympathetic and parasympathetic) nervous system results in anxiety, hypervigilance, numbing, immobility and dissociative responses. The autonomic nervous system has a major role in managing the internal balance of the body, maintaining homeostasis, regulating blood pressure, body temperature, breathing, heart rates, digestive functions, metabolism, body fluids, waste disposal and sexual arousal (B. D. Perry & Szalavitz, 2008). The myriad of issues that can arise during a child's development through disruption to the autonomic nervous system are extensive, with basic functional abilities such as being able to process information and engage the cortical regions of the brain some of the many functional abilities that can be impacted (Uhernik, 2017). The extent to which trauma can alter brain development, physiological regulation and psychological state cannot be understated. As Sonne and Gash (2018) note, 'experiences in the early years from infancy through to childhood are crucially important in sculpting the brain development and function' (p. 11). When children are raised in uncaring and chaotic environments, are taught violence as a means to resolve problems and are continually berated and shamed, the development of dopaminergic reinforcement goes awry, instead resulting in a severely compromised brain and capacity to manage emotion and behaviour (Sonne & Gash, 2018; van der Kolk, 2005).

The scale of the neurodevelopmental implications for children involved in the ISIS victim–perpetrator paradox requires many years to be completely understood. However, as more child soldiers find freedom, it is evident that significant developmental trauma is apparent. In an interview discussing children of ISIS, Yazidi activist Khalid Nermo Zedo stated, 'Can you imagine a 12-year-old child or a 10-year-old or an 8-year-old dragged from their mother by force, taken to military training camps, forced to carry weapons, forced to convert to Islam, told everything they grew up believing is apostasy, that their parents are unclean "unbelievers?"' (para. 29) (Elbagir & Wilkinson, 2016). Although the brain is incredibly malleable during child development, and the effects of trauma can be treated, there is a great vulnerability to the brain during childhood. During these fundamental years the brain organises the foundational stress response systems, determining the manner whereby a child perceives and responds to the world. Exposure to violence and trauma during this time will alter the developing brain, creating abnormalities in limbic and cortical regions, consequently compromising a myriad of cognitive and emotional processes (Rock et al., 2018).

Complexities of treatment and risk

Although ISIS was disrupted in 2019, the long-term rippling effects of the violent regime remain, with the extent of trauma and potential for future violence amongst exposed children

largely unexamined (Anaie, 2019; Dozier, 2019). Many children still remain in the Middle East, whilst some have retuned or migrated to Western Countries. For the international community, there continues to be many unknowns, with no immediate or long-term solutions identified to recognise or support child soldiers of ISIS. According to Dozier (2019), at the most fundamental level there is need to deprogram and heal children, matters that cannot be left unresolved. To adequately address the complexity of the victim–perpetrator paradox, solutions must balance the needs of the child alongside the needs of the community. This involves providing sufficient resources and support to ensure rehabilitation and deradicalisation, whilst providing consideration in respect to a child's potentiality for harm. According to Koehler (2020), 'Not providing interventions at all or not in the necessary quality or volume naturally raises the potential of prolonged and increased risk to the society at large beyond the prospect of extremist and terrorist activities, including general criminality, substance abuse and violent behaviour of traumatized individuals' (p. 466). Consequently, while the broader contextual approaches to treatment and risk management are of central importance, any response must also ensure that appropriate responsivity considerations are made in relation to a particular child (Andrews & Bonta, 2006; Andrews et al., 1990; RTI International, 2018).

Assessing risk

Child soldiers who have been exposed to considerable trauma and trained to perpetrate violence require both trauma-informed screening and risk assessment. The need for risk assessment practice with children of ISIS is twofold: determining the extent of extremist ideology and violent propensity, along with identifying targets and factors for rehabilitation and reintegration (Cook & Vale, 2019; Radicalisation Awareness Network, 2017; Van der Heide & Alexander, 2020). Whilst the need for psychological intervention and reintegration has been paramount amongst child soldiers, children of ISIS are characterised as also presenting a threat to national security (Capone, 2017). This centres on children having been indoctrinated through an extremist ideology, fostered upon instilling a specific worldview that normalises violence and promotes martyrdom as an honourable reward for the emigration and waging of jihad (Bozorgmehri, 2018; Van der Heide & Alexander, 2020). Alongside the risks associated with extremist ideology, children subjected to victimisation and abuse are more likely to have been exposed to adverse social and environmental conditions (e.g. parental substance abuse, antisocial peers, modelled violence, limited education and social isolation). This exposure to multiple adverse factors has been shown to increase the likelihood of children engaging in offending behaviour (National Crime & Prevention Centre, 2008; Van der Heide & Alexander, 2020). For instance, a 10-year-old child exposed to six or more risk factors can be up to 10 times more likely to engage in violent behaviour by 18 years of age, as opposed to those exposed to only one risk factor (Herrenkohl et al., 2000).

Depending on the age of the child, the administration of risk assessment tools can be straightforward or complex. If a child is of younger age then risk assessment may be challenging. Many risk assessment tools are often unsuitable for children under the age of 12, whilst risk may often appear to be a distant concept (Epperson et al., 2006; Miccio-Fonseca, 2010; Prentky, 2006; Prentky et al., 2000; Prentky & Righthand, 2003; Righthand et al., 2005; Worling, 2004; Worling & Curwen, 2001). For younger children, the role of trauma and psychological wellbeing often become the central focus for intervention, with risk an overarching factor. This requires consideration based on the child's response to intervention in conjunction with their psychological development as they progress in age. For children approaching adolescence, risk

assessment tools are considered to have greater utility and validity (Prentky, 2006; Prentky et al., 2000; Prentky & Righthand, 2003; Righthand et al., 2005).

The first stage of assessment requires a thorough review of a child's potential psychopathology, in particular trauma symptomology. There are a variety of tools that cater to children up to the age of 18 years, examining mental health symptoms relating to anxiety, depression and PTSD. Examples of tools that may assess mental health psychopathology in children include: the Child and Adolescent Needs and Strengths–Trauma Comprehensive Version (CANS–TCV; Kisiel et al., 2013), the Child Behaviour Checklist for Ages 6–18 (CBCL/6–18; Achenbach & Rescorla, 2001), the Trauma Symptom Checklist for Children (Briere, 1996), and the Pediatric Symptom Checklist (PSC; Jellinek et al., 1988). The central aim of these forms of assessment is to identify and establish the baseline level of symptomatology and the extent of symptom severity. These forms of assessment guide the prioritisation of treatment needs and further inform risk assessment practice.

The second equally important aspect of assessment relates to determining the risk of future violence and examining for evidence of radicalisation. There is considerable support to suggest that early onset of violent behaviour is associated with increased risk for future chronic and serious violence (Farrington, 1991, 1995; Herrenkohl et al., 2000; Kratzer & Hodgins, 1996; Mossman, 1994; Thornberry et al., 1995). Risk assessment instruments are validated measures that assess the individual, personal and situational factors determined to contribute to offending behaviour (Dean, 2014). The Structured Assessment of Violence Risk in Youth (SAVRY; Borum et al., 2006) and Early Assessment Risk List (EARL; Augimeri et al., 2001) have been demonstrated to identify risk of violence and antisocial behaviours amongst children and adolescents (RTI International, 2018; Savignac, 2010). Along with these tools, the RADAR is an intervention tool (based on the work of Barrelle, 2015) developed to assess risk needs in relation to ideology and radicalisation.

The EARL assessment tools are designed to assess disruptive behavioural problems that may indicate future antisocial, aggressive or violent conduct (Augimeri et al., 2005). The measures are validated on both boys and girls and are intended for children aged between 6 and 11 years of age. In contrast, the SAVRY is validated for use with children aged between 12 and 18 years of age (Borum et al., 2006). The SAVRY is a structured professional judgement instrument designed to measure the likelihood of a child engaging in future violence. The tool examines historical risk factors, social and contextual factors, individual risk factors and protective factors. Both the SAVRY and EARL determine dynamic risk factors relevant to the child being assessed, whilst providing intervention targets to reduce risk (Augimeri et al., 2005; Borum et al., 2006).

The RADAR consists of two approaches to assessment, these include a screening tool consisting of 15 indicators and an in-depth assessment consisting of 27 indicators (RTI International, 2018). Three overarching dimensions emerge across both instruments, with these including ideology, social relations and action orientation. These dimensions pertain to segments of an individual's life where significant changes are likely to occur due to radicalisation. The dimensions of the RADAR are primarily consistent with the five disengagement themes proposed by Barrelle (2015). In a study of 22 former extremists, with some younger than 15 years of age, partial support was found for the dimensions in examining adolescent radicalisation. Although the RADAR does not serve as a validated risk assessment tool (in respect to predicting future risk for violence), the instrument has been found to have application in the identification of those at risk of radicalisation (Cherney & Belton, 2019; Mazerolle et al., 2020; RTI

International, 2018). Although the RADAR is a newly developed instrument, the tool appears to provide promising utility with both adolescents and adults, particularly in respect to identifying those likely to benefit from programmes and interventions targeting deradicalisation.

With regard to assessing risk of future violent extremism, there are numerous violent risk assessment tools used in clinical and forensic settings; however, these tools have only received validation for use with adult violent extremists. Currently, assessment tools such as the Violent Extremism Risk Assessment-2 (VERA-2; Pressman & Flockton, 2012) and the Terrorist Radicalization Assessment Protocol-18 (TRAP-18; Meloy, 2018) require empirical examination and validation with juvenile perpetrators before recommendations can be provided pertaining to use. There is an emerging body of risk assessment tools for the assessment of violent extremism and radicalisation. Valuable reviews have been undertaken on the suitability of these tools (see Radicalisation Awareness Network, 2017; RTI International, 2018); however, at present the application of these instruments primarily pertains to adults rather than children. It is important to recognise that the motivations and pathways towards violence are likely to have differed significantly between adults engaging in extremism and children involved with ISIS. Although both adults and children may demonstrate radicalisation, adults who travelled to ISIS were motivated by ideology (Borum, 2011), a need for significance (Kruglanski et al., 2014) and group identity (Webber & Kruglanski, 2017). In contrast, children were forced into compliance, motivated by fear, indoctrinated, encouraged by family members and taught violence as social behaviour. Moreover, children were deprived of the capacity to understand the significance and consequences of their actions (Benotman & Malik, 2016). Subsequently, there are not validated risk assessment tools to examine the risk of violent extremism amongst children. However, the use of existing psychometric risk assessments such as the SAVRY and EARL provide structured guidance to inform decision making in relation to violent and antisocial behaviour, whilst the RADAR provides important considerations relating to indicators of radicalisation. Although these tools do not exclusively inform future risk of violent extremism, these assessments do provide valuable evidence-based guidance relating to generalised violence, antisocial behaviour and radicalisation.

Repairing damage

There are a variety of psychological services and psychoeducational learning programmes tailored to individuals identified as having experienced and enacted violence during childhood. There are two primary components that require consideration for children who have been exposed to the violence of ISIS. The first step entails determining whether a need exists in relation to radicalisation. At the core of ISIS teachings is the indoctrination of children to hate the West, ensuring that the ideology proceeds through generations (Anaie, 2019; Dearden, 2016c). As Van der Heide and Alexander (2020) note, 'practitioners who interact with minors who lived in Islamic State controlled territory should have some fundamental awareness about the effects of deprivation and trauma on children' (p. 20). Moreover, children also experience a loss of identity and are subject to stigmatisation and discrimination (Capone, 2017; Morris & Dunning, 2020; Van der Heide & Alexander, 2020). At the most fundamental level, treatment and rehabilitation are about helping the child to construct a new understanding of who they are and who they want to become, instead of assisting the child to return to their pre-radicalised psychological state (Braddock, 2014; Van der Heide & Alexander, 2020).

According to Barrelle (2015), disengagement from violent extremism into society requires a holistic framework captured through

the pro-integration model (PIM). Radicalisation is considered to result in changes to social relations, coping, identity, ideology and action orientation. Approaches to support deradicalisation and pro-integration can include individualised and group-based treatment through to countering violent extremism (CVE) initiatives. CVE encompasses programmes, interventions and policies that seek to reduce the exposure to promoters and causes of violence (Harris-Hogan, Barrelle, & Zammit, 2016; Sestoft et al., 2017; Weine et al., 2017). The aim of these approaches is to provide greater access to resources and support at both a community and individual level, fostering increased well-being and engagement across society. The ultimate intention of CVE methods is to provide a platform to support and address the fundamental issues related to extremism.

The second central aspect to intervention and support relates to the myriad of trauma symptomology that may arise for a child, ranging from intense affects and experience recurrence, through to emotional dysregulation and precipitous behaviour (van der Kolk, 2005). The extent of this symptomology can vary in density, severity and expression, including: intense affects, efforts to ward off recurrence, behavioural re-enactment, somatic problems, emotional and behaviour deregulation, anticipatory anxiety and fear, a schematic view of a dangerous and distrustful world, dissociation, negative self-attributions, mood disturbance, misinterpretation of events and expectation of caregiver abandonment (Herman, 1992; Klasen et al., 2015; Maté, 2003; van der Kolk, 2005). A traumatised child may engage in 'excessive clinging, compliance, oppositional defiance and distrustful behaviour, and they may be preoccupied with retribution and revenge' (van der Kolk, 2005, p. 407). For children exposed to ISIS-related violence, the basic building blocks of attachment and caregiver relationships will be altered. Although trauma may not arise through direct violence, it can develop through an impending sense of doom, or being in a heightened state of continued arousal. Dozier (2019) details the experience of two cousins, both 16, who were trained by ISIS and required 'to wear suicide belts much of the time, packed with metal intended to kill attacking troops' (para. 19). At the fundamental level of Bowlby's (1953, 1960, 1969) work on attachment is trust: trust that the world is predictable, certain and safe. When this stage of development is ruptured, all subsequent mental representations and associations of the world become skewed and constructed on a fragile neurocognitive foundation. Before any form of treatment can begin to address trauma, an environment of safety, predictability and compassion must be cultivated (Maté, 2003). Once this is achieved, evidence-based intervention modalities to address traumatic re-enactment, behavioural and emotional dysregulation and distorted schemas can be undertaken (van der Kolk, 2005).

The role of therapeutic service providers in addressing the underlying issues for children exposed to ISIS violence requires balancing both the needs of the child and consideration for community safety. Ensuring recovery from trauma has immense implication not only for individuals but also for international security (Dozier, 2019). The involvement of practitioners and service providers can come in many forms, encompassing psychiatric consultation, specialised psychological treatment, cognitive behaviour approaches, counselling, educational programmes and mentoring (Sukabdi, 2015, 2017). Given that research has shown that child soldiers experience greater mental health difficulties, particularly in relation to trauma and depression (Klasen et al., 2010; Kohrt et al., 2008; Okello et al., 2007; Song et al., 2014), it is important that intervention is implemented when mental illness is coinciding with radicalisation. In such instances, particularly if a child is of adolescent age, comprehensive clinical and forensic expertise may be required to balance the complexity between treatment, risk and safety needs (Yakeley & Taylor, 2017). Another important

consideration for treatment relates to the alternative offence pathways that may emerge beyond the possibility of extremism and terrorism. The extended exposure to stress and trauma experienced by children has been shown to increase the risk of alcohol and substance use in later ages (Andersen & Teicher, 2009). This is suggested to occur due to many violent extremism environments introducing children to substances, with the drug reward circuitry being characterised by a similar neurological system response to that triggered by stress (Gordon, 2002; Koehler, 2020).

Specific areas of intervention consideration may include, but are not limited to: diagnostic management, schematic processes, trauma and attachment, re-parenting, violent cognitions, communication and expressive behaviour, identity formation, prosocial behaviour modelling, risk mitigation and management and harm reduction (Sukabdi, 2015, 2017). Further general treatment strategies may also aim to build emotional regulation, problem-solving skills, empathy and moral reasoning (Aly et al., 2014). Educational and counselling services can also provide valuable intervention and support approaches if able to achieve a safe environment for children and adolescents. Educational programmes can provide young people who demonstrate at-risk behaviour or extremist beliefs with treatment approaches seeking to reconcile the vulnerabilities that have exposed the young person to extremism, alongside promoting resilience, empathy and prosocial coping skills (Aly et al., 2014; Song et al., 2014). For example, Ertl et al. (2011) observed that both narrative exposure therapy and an academic catch-up programme (consisting of psychoeducation and supportive counselling) significantly improved PTSD symptom severity in a sample of former Ugandan child soldiers, although the effect of narrative exposure therapy was more pronounced than that in the academic catch-up group. This suggests that developing a chronological account of biographical events and reframing memories achieved a greater reduction in PTSD symptomology. For the most part, education and group-based counselling initiatives can promote tolerance and understanding, and allow for exploration of civic values and cultural diversity (Aly et al., 2014; Sukabdi, 2015). However, a limitation of these approaches is that programmes can be widely varied, with some based on informed practice, whilst other initiatives can have poorly defined aims and ineffective approaches to promote engagement (Aly et al., 2014).

A commonly overlooked area relevant to promoting change is the role of families and the immediate community. Without the ability to integrate, or reintegrate, into a socially supportive setting, the efficacy of any rehabilitative treatment can be drastically reduced (Ertl et al., 2011). Child soldiers are often treated with suspicion and distrust by families and communities, stigmatised and ostracised (Ertl et al., 2011; Song et al., 2014). Iraq and Syria are not well equipped at a country or community level to handle the humanitarian and reintegration needs of children involved with ISIS, whilst Western countries are greatly dependent on sufficient intelligence and communication to identify child soldiers (Anaie, 2019). According to Anaie (2019, p. 115), 'By re-integrating these children into society and providing them proper education and jobs, the children are less susceptible to rejoining armed groups or radicalising their peers'. Subsequently, community initiatives are of utmost importance to providing children with opportunities for success and for developing skills to manage adversity (Aly et al., 2014). Involving children in sporting events or local community arts activities can assist in establishing positive autonomy, promote prosocial behaviour and help in developing social relationships. However, for community approaches to be successful, it is important to appropriately understand the needs of the community and identify where gaps in support and resources exist. This is often dependent on governments being proactive and providing

funding initiatives for identified needs. This requires engagement and communication with communities or minorities considered to be at risk or in need of support, listening and garnering input from representatives of these groups. The array of initiatives to support the complex community needs in relation to child soldiers is broad and particularly context and location dependent. Some of these initiatives may include: family-based approaches, outreach services, school programmes and opportunity provisions (Aly et al., 2014).

Final considerations

ISIS can never truly be defeated until children are deradicalised, threats are mitigated and psychological healing has begun. Although the territorial control of the Middle East has ceased, and children have been removed from conflict zones or escaped to return home, the psychological effects remain. While some children have returned home to their families or community, many other children are currently detained in camps or prisons, exposed to ongoing factors that may contribute to further traumatisation, abuse or ongoing radicalised ideology (Capone, 2017; Van der Heide & Alexander, 2020). Whether now in confinement or at home, every child soldier of ISIS has been exposed to violence and trauma. The prevalence estimates of PTSD amongst this cohort of children remains largely unknown. This is likely to vary based on the severity of exposure, the age of the child and the time period since being involved with ISIS. Further confounding factors are also likely to impact the reliability of any prevalence estimates, with abduction, age of conscription, gender, exposure to violence, stigma and the availability of protective factors considered to affect the development and severity of trauma (Betancourt et al., 2013)

The consequences of trauma can persevere throughout life, even when symptomology is no longer considered to meet the diagnostic criteria of PTSD. Trauma can manifest in various ways and presentations, from the neurobiological level through to observable behaviour. Children of ISIS have been subject to uncaring, chaotic and violence-prone environments. Children were praised and rewarded when adopting ISIS rhetoric and acting violently. When failing to comply with requests or adhere to the ideology, children were berated and shamed. This process of indoctrination and radicalisation alters the reinforcement pathways within the brain along with the processes influencing behavioural expression. This causes dopaminergic reinforcement to go awry, havoc to the stress response systems and abnormalities in the limbic and cortical regions of the brain (Rock et al., 2018; Sonne & Gash, 2018). Ultimately, indoctrination, radicalisation, modelled and learnt violence and traumatic exposure come to determine the manner whereby a child perceives and responds to the world, a world of unpredictability, danger and suffering.

Without intervention, the effects of trauma can persist throughout the life course (van der Kolk, 2005). Attempting to repair the damage from traumatic exposure is a complex task; however, when left unaddressed, a myriad of comorbid mental health problems may arise. Moreover, any developed radicalised ideologies may remain, with the capacity for violence and ongoing risk unknown and undetermined. Currently there are no immediate or long-term solutions to recognise or support child soldiers of ISIS, a multifaceted issue with implications for humanity and society. Fundamentally, solutions must encompass the needs of the child alongside the needs of the community, the need for individual change, community reform and societal safety. Responses must also ensure that appropriate responsivity considerations are made in relation to a particular child, balancing treatment, integration, risk and threat (Andrews & Bonta, 2006; Andrews et al., 1990; RTI International, 2018).

Recently, organisations in Syria and Iraq have begun to provide psychological support

for children rescued from conflict zones. Preliminary observations from treating practitioners have been concerning, with suggestions that children are highly radicalised and would return to ISIS-led regimes if presented with the opportunity (ABC News, 2019). There remain many challenges ahead for countries such as Australia and those across Europe and the United Kingdom, with repatriation the beginning stage of an extensive process. One of the greatest challenges for traumatised and at-risk populations is the need to establish consistent and stable conditions for treatment to ensue. With many children of ISIS in refugee camps, imprisoned or removed from caregivers, many environmental circumstances do not currently support the therapeutic conditions required for treatment. Previous intervention efforts with former child soldiers have highlighted the importance of consistency and safety in the rehabilitative process, along with community support and inclusion (Betancourt et al., 2013; WHO, 2009). Although the extent of trauma in cohorts of former child soldiers has been extensive, and intervention has often required a prolonged and collaborative approach, treatment has resulted in reductions of mental health psychopathology, prosocial behavioural expression and improved social adjustment (Betancourt et al., 2012; Ertl et al., 2011; McMullen et al., 2013; WHO, 2009). Children of ISIS are a new wave of child soldier; however, treatment and public initiatives in cases of former child soldiers have proven successful. The victim–perpetrator paradox of child soldiers remains one of the greatest issues for humanity and society.

To effectively address the emerging humanity crisis relating to the children of ISIS, it is essential that children of the regime are identified. This remains pivotal given the separation and dispersion that have occurred with ISIS, resulting in some children migrating or retuning to Western countries, whilst others remain incarcerated or in refugee camps. Upon identification, appropriate action must be undertaken to determine the needs of the child in respect to intervention, support, care and risk. During this stage, assessment must occur, formulating the understanding of the present concerns in respect to a given child. This stage of determination then serves to inform the type of response required, whether primarily intervention, or incorporating a broader educational, social and community response.

There is urgent need for a societal response to the children indoctrinated and radicalised through ISIS. Although dismantled, the ISIS regime continues to remain a threat, with a need for greater investigation and research into the younger generation of fighters who, without intervention and support, may lead the next uprising. Without a unified and timely response, 'the current situation is ripe for the proliferation of crime, violence, and extremism' (Van der Heide & Alexander, 2020, p. 16). Undoubtedly, this new wave of child soldiers is a global phenomenon and has large-scale implications for global security and the psychosocial wellbeing of many communities around the world. It is hoped that the present review can serve to raise to awareness of this traumatised and at-risk population, conveying the urgency with which the international community must collaboratively respond.

Ethical standards

Declaration of conflicts of interest

Nathan Brooks has declared no conflicts of interest

Vaishnavi Honnavalli has declared no conflicts of interest

Briar Jacobson-Lang has declared no conflicts of interest

Ethical approval

The article does not contain any studies with human participants or animals performed by any of the authors.

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